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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,212	09/26/2003	Kimio Nakayama	243095US0	6831

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EXAMINER

MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1786

NOTIFICATION DATE	DELIVERY MODE
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08/05/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/670,212	Applicant(s) NAKAYAMA ET AL.	
	Examiner MATTHEW D. MATZEK	Art Unit 1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-12 and 17-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/7/2010 has been entered.

Response to Amendment

2. The amendment dated 5/7/2010 has been fully considered and entered into the Record. Claim 1 has been amended. The amended claim contains no new matter. Claims 1, 2, 4, 6-15 and 17-24 remain pending, with claims 13-15 withdrawn from prosecution. Claims 1, 2, 4, 6-12 and 17-24 remain active. The previously applied prior art rejections have been withdrawn due to the amendment of claim 1, which now recites the crosslinking of the acryl-polyurethane composite elastomeric polymer by copolymerizing a polyfunctional ethylenically unsaturated monomer.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 2, 4, 6-8 and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over SU 4453003 A, hereinafter '003, in view of Tomotsugu et al. (US 5,338,613), Takeyama et al. (US 6,299,977), Ashida et al. (JP 09059881) and Mast (US 4,914,764). Examiner has relied upon an English translation of the Russian document.

a. The Soviet patent discloses aqueous dispersions of acrylic copolymers which are used for synthetic leathers (page 3). The dispersion is carried out by co-polymerizing (meth)acrylic esters with urethane monomers (I) in the presence of an emulsifier acid initiator. The heat resistance, wear resistance and strength of the products are increased. As (I), the reaction production of ethylene glycol monomethacrylate with 2,4-toluylenediisocyanate, hexamethylene diisocyanate and polyisocyanate is used (page 4). The applied patent fails to teach how the acryl-polyurethane composite elastomer is used in artificial leather or the use of a crosslinking agent.

b. Tomotsugu et al. disclose a photo-curable resin comprising an acryl-polyurethane composite elastomeric polymer and a crosslinking agent. The composition has a high degree of weather resistance (abstract). The acryl-polyurethane can be crosslinked with monomers which are commonly used in a photocurable resin composition containing at least one and preferably not less than two (meth)acrylol groups within the molecule. These compositions include neopentyl glycol di(meth)acrylate (col. 3, lines 20-33, Example 2).

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- c. '003 and Tomotsugu et al. are from the same field of endeavor (i.e. acryl-polyurethane composite elastomeric polymer).
- d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have added the crosslinking agent of Tomotsugu et al. to '003 with the motivation of making the acryl-polyurethane weather, wear and hydrolysis resistant as disclosed by Tomotsugu et al. (col. 1, lines 50-54).
- e. Takeyama et al. teach an artificial leather (Abstract), nonwoven fabric, comprising fiber bundles having a single fineness of no greater than 0.2 denier (0.222 dtex) (col. 3, lines 15-18). The nonwoven fabric is impregnated with polyurethane elastomer comprising a diisocyanate component (col. 8, lines 25-43). Examiner equates the applied nonwoven fabric to the three-dimensional entangled body of Applicant. The polymer is impregnated in the range of 15-80% of the weight of the nonwoven fabric (col. 9, lines 10-14). This provides for the ratio of the elastomeric polymer A to the three-dimensional entangled body in the limitation of claim 1. The surface of the artificial leather may contain naps of 40-300 microns, which anticipates the instantly claimed nap lengths (col. 11, lines 5-8).
- f. '003 and Takeyama et al. are from the same field of endeavor (i.e. artificial leathers).
- g. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of '003 with the fibers and impregnation rate of Takeyama et al. with the motivation of forming artificial leather, which is the purpose of '003.

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- h. Ashida et al. teach the creation of suede-tone artificial leather comprising fiber bundles containing a black pigment reflecting infrared rays. The fiber bundles are made of conjugate ultra-fine polyethylene or nylon fibers containing perylene black (an organic black pigment) in an amount of greater than or equal to 5 percent [structure, page 2]. A nonwoven web of the fiber bundles is impregnated with a polyurethane ratio of 70:30. The impregnant may contain pigments, such as carbon black, at levels ranging from 0.1 to 5 weight percent.
- i. '003 and Ashida et al. are from the same field of endeavor (i.e. artificial leather).
- j. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have made the article of '003 with the fiber pigments and percentages disclosed by Ashida et al. The skilled artisan would have been motivated by the desire to create an article that is capable of reflecting infrared rays (Abstract, Ashida et al.).
- k. Mast et al. teach a bath pigmentation process to improve the light fastness of leather (Abstract). The pigments available for use include insoluble azo pigments (col. 2, lines 39-46), carbon black (col. 1, lines 8-17) and inorganic pigments. Mast et al. provide seven different pigment mixtures that consist of multiple pigments (col. 8, line 46-col. 9, line 8). The claimed particle sizes are provided for in the abstract. Water-based polyurethanes may be used for pre-fixation to assist in fixing the pigments into the leather (col. 3, lines 14-28).
- l. '003 and Mast et al. are from the same field of endeavor (i.e. colored leathers).

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m. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have made the article of '003 with the pigments of Mast et al. motivated by the desire to obtain pigment penetration of the leather and improved light fastness (abstract).

n. With regards claims 1, 6 and 8, although the applied references do not explicitly teach the instantly claimed feature of the polyurethane's swelling rate or its color fastness. It is reasonable to presume that said property is inherent to combined applied article. Support for said presumption is found in the use of like materials (i.e. acryl-polyurethane composite formed from an aqueous solution). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed properties of the polyurethane's swelling rate or its color fastness would obviously have been present one the combined product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80.

o. Claim 7 is rejected as the size of the elastomeric polymer A particle cannot serve as a further limitation in the instantly claimed article as the elastomer melts and impregnates the nonwoven fabric and therefore loses its particle form in the fabricated article.

p. Claims 17-20 are rejected as the relative amount of carbon black is a result-effective variable affecting the blackness of the fibers [0008, page 7] and their ability to reflect infrared rays. Increasing the amount of pigment increases the reflectance and depth of color. Consequently, absent a clear and convincing showing of unexpected

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results demonstrating the criticality of the claimed ratio, it would have been obvious to one of ordinary skill in the art to optimize this result-effective variable by routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

q. The disclosure of Ashida et al. is silent as to the size of the pigment particles. It is well known in the art of leather/artificial leather pigmentation that the particle sizes are within the instantly claimed ranges. Mast et al. demonstrate this, which teaches that pigments for the use of coloring leather are from 0.050 to 0.5 microns (Abstract). The reference explicitly mentions carbon black and azo pigments (col. 1, lines 8-12 and col. 2, lines 39-43).

r. Claims 21 and 22 are rejected as it would have been obvious to one of ordinary skill in the art at the time the invention was made to have impregnated the pigmented elastomer into the three-dimensional entangled body at either with or without a gradient in the thickness direction. The skilled artisan would have been motivated by the desire to create an article with varied aesthetics.

4. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over SU 4453003 A in view of Tomotsugu et al. (US 5,338,613), Takeyama et al. (US 6,299,977), Ashida et al. (JP 09059881) and Mast (US 4,914,764) as applied to claim 1 above, and further in view of Higuchi et al. (4, 525,169).

a. '003, Tomotsugu et al., Takeyama et al., Ashida et al. and Mast et al. references fail to teach the use of a pigmented coating layer or the lamination of another layer to the artificial leather article.

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b. Higuchi et al. teach artificial grain leather having different color spot groups comprised of ultra fine fibers, in which at least one side of the fibrous substrate has two types of colors provided in a coating layer (Abstract). As demonstrated in Example 1 (col. 8, lines 58-61 and col. 9, lines 28-33) polyurethane with imbedded pigment may be used to impregnate the artificial leather at a level of 0.5 percent. Resins for use in the coating layer comprise polyurethane (polymer A), polyacrylic acid (polymer B), and polyvinyl chloride (polymer C) (col. 5, lines 43-49). The colored coating layer is made of a coating composition in which resins are mixed with pigments. The pigments should not make up more than 30% by weight of the coating (col. 5, lines 59-64). As the pigments are to make up 30% or less of the weight of the coating of the article of Higuchi et al., the pigments of the coating and impregnant together, necessarily meet the compositional limitations instantly claimed by Applicant. Example 3 teaches the use of carbon black (Pigment A), insoluble azo and disazo condensation pigments (Pigments B and C) in a polyurethane vehicle for the coating film layer and a multitude of dyes for the creation of a dyed fabric.

c. '003 and Higuchi et al. are from the same field of endeavor (i.e. artificial leather).

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to add pigments to the elastomer of '003 motivated by the desire to create an artificial grain leather presenting an entirely new tint with quality appearance and having different color spot groups, which cannot be attained by natural leather (col. 1, lines 56-60).

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e. Claim 9 is rejected as Higuchi et al. teach the use of pigments in the coating layer (col. 5, lines 59-64) and Takeyama et al. teach the addition of a surface layer comprising elastomeric polymer, which is either the same kind or different kind from the impregnation polymer on the base material (nonwoven, napped fabric) (col. 21, lines 13-18). This results in a grained surface (col. 21, lines 13-15) rejecting claim 12. Claim 11 is rejected as Figure 3 illustrates a discontinuous surface coating resulting in a semi-grained article. Claim 10 is rejected as Higuchi et al. teach that the artificial leather article may be made of a laminate comprising woven, nonwoven and knitted fabric (Claim 8).

Response to Arguments

5. Applicant's arguments with respect to claims 1, 2, 4, 6-12 and 17-24 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/
Examiner, Art Unit 1786